

## ABSTRACT OF THE DISCLOSURE

5 Methods and apparatus for broadcasting high quality audio "studio  
direct" with the same digital information employed in the studio by the video  
producer with AC-3 digital audio signals for broadcast to integrated receiver  
decoders (IRD). The methods and apparatus permit proper handling of AC-3 data  
by switching signals to encoders in response to detection of the encoded signals  
representing compression of the data. Control over individual data bits such as  
10 copyright bits is maintained by determining the bit status, comparing it to a preferred  
status, changing the status if it does not comply with the preferred status, and  
reevaluating cyclical redundancy check value in each data packet to avoid disruption  
in the data transmission. In addition, the system includes an uplink device which  
automatically checks, logs and reports errors in Dolby Digital AC-3 signals by a  
15 monitor which employs a processor, a digital audio card and an SMPTE timecode  
reader. As an option, an ethernet interface may be provided to permit AC-3  
transmission to expedite storage and transmission of the audio data by media such as  
compact disks. The monitor employs a state machine that finds AC-3 packets, locks  
into the packets and detects discontinuities or loss of signal. The monitor then  
20 computes and checks the cyclical redundancy check value of the AC-3 packet found.  
In addition, the system enables the device to play AC-3 signals such as Dolby Digital  
out in sync with video signals, regardless of the storage media for the files. A sound  
card having an input for receiving house reference AES clock pulses enables the AES  
clock of the playback signal to be locked to the frequency of a production house  
25 master as a time code reader or an editor's contact closure match video and audio  
signals playback.